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| APPLICATION NO.                                                                                                             | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.      | CONFIRMATION NO. |
|-----------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|--------------------------|------------------|
| 10/075,367                                                                                                                  | 02/15/2002  | O'Hagan Kenneth      | 031616.0003              | 8848             |
| 21967                                                                                                                       | 7590        | 05/18/2005           | EXAMINER<br>FILE, ERIN M |                  |
| HUNTON & WILLIAMS LLP<br>INTELLECTUAL PROPERTY DEPARTMENT<br>1900 K STREET, N.W.<br>SUITE 1200<br>WASHINGTON, DC 20006-1109 |             |                      | ART UNIT<br>2634         | PAPER NUMBER     |

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/075,367

Applicant(s)

KENNETH, O'HAGAN

Examiner

Erin M. File

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-16, 19-24, 27-33, 35, 37-39, 42, 43, 45, 47-49 and 52 is/are rejected.
- 7) ☒ Claim(s) 11, 17, 18, 25, 26, 34, 36, 40, 41, 44, 46, 50 and 51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure is objected to because of the use of acronyms BPSK, QPSK and PN (line 10). Correction is required. See MPEP § 608.01(b).
2. The disclosure is objected to because of the following informalities: the recitation on page 9, line 24, "and *quadrutute* (Q) channels can be spread..." should be changed to "and *quadrature* (Q) channels can be spread....". Further, on page 15, lines 5 and 6, refer to a "Biggest picker". This term is not one commonly used in the art and must be explained or defined. Appropriate correction is required.

### ***Claim Objections***

3. Claims 12 and 13 are objected to for the use of acronyms BPSK, QPSK respectively. These acronyms should be appropriately defined as binary phase shift keying (BPSK) and quadrature phase shift keying (QPSK). Appropriate correction is required

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4-9, 13-15, 28-33, 35, 37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Agrawal.

**Claims 1, 2, 4-7, 9, 14, 28-31, 33, 37, 38**, Agrawal discloses encoding signal  $s(t)$  with orthogonal codes  $w_i(t)$  (fig. 2A, 202) and then spreading the encoded signal with a pseudo random (PN) spreading signal (204). Further Agrawal discloses the use of a PN spreading code of 1,024 bits (col. 8, line 1). The orthogonal Walsh function is of length 4 (col. 5, lines 30-40). PN spreading code of length 1,024 is an integer multiple of the Walsh function of length 4.

**Claims 8, 13, 35**, inherit the limitations of Claim 7, 8, and 33 respectively. Agrawal further discloses differential encoding in the form of Quadrature phase shift keying (QPSK) encoding (fig. 4A, 300).

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**Claim 15, 32**, inherits the limitations of Claim 7, further, Agrawal discloses modulating the data by a quadrature phase shift keying spreader (fig. 4A, 300), and further transmitting the signal (410A).

6. Claim 16, 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Okubo et al.

**Claim 16, 39**, Okubo discloses receiving a multiplexed signal of parallel spread spectrum data. Figure 8 demonstrates how the received parallel spread spectrum signal is generated (col. 2, line 19). The data is received through an antenna (fig. 9, 311) and the data stream is demodulated and recovered (output of 313).

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 20-24, 27 are rejected under 35 U.S.C. 102(a) as being anticipated by Kim et al.

**Claims 20-24**, Kim discloses receiving data from a base station, encoding, spreading and synchronizing said data and retransmitting data (fig. 3). Kim discloses this process

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embodied both in a mobile station or mobile telephone device ([0007]), and a base station ([0008]).

**Claim 27**, inherits the limitations of Claim 20, further Kim discloses generation of parallel spread spectrum data by multiplying data by orthogonal code (fig. 3, S35) and further multiplying spread data a scrambling code (S37). Further Kim discloses that the scrambling code and the orthogonal code are of the same length, therefore the scrambling code is an integer multiple, 1, of the orthogonal code ([0028], lines 6-9).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Argrawal.

**Claim 3**, inherits the limitations of Claim 1. Argrawal does not disclose expressly encoding of length 8 bits. However, applicant has not disclosed a code length of eight is used for a particular purpose, or solves a stated problem, but instead discloses the

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code length must be a power of 2, such as 4, 8 or 16 (p.8 line 15). As Agrawal discloses the use of a code length of 4, one of ordinary skill in the art would have expected Applicant's invention to perform equally well with a code length of 4.

11. Claims 10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agrawal and in further view of Schilling et al.

**Claim 10**, inherits the limitations of Claim 9. Although Agrawal discloses transmitting data represented by Walsh codes, he fails to disclose segmenting data streams in to multiple bit data packets. However, Schilling discloses parallel spread spectrum transmission of data packets (col. 1, lines 6-9). Because of the prevalence of using data packets in transmitting parallel spread spectrum data as described by Schilling, it would be obvious to one skilled in the art at the time of invention to incorporate Schilling's data packetization into Agrawal's apparatus.

**Claim 12**, inherits the limitations of Claim 8. Although Agrawal discloses differential encoding in the form of Quadrature phase shift keying (QPSK) differential encoding, but fails to disclose binary phase shift keying (BPSK) modulation. However, Schilling discloses BPSK modulation can be used in a parallel spread spectrum encoding and spreading system in place of QPSK modulation. Because of this teaching it would be obvious to one skilled in the art at the time of invention to use BPSK in place of QPSK modulation in Agrawal's invention.

12. Claims 19, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okubo et al. and in further view of Agrawal et al.

**Claim 19, 42**, inherits the limitations of Claims 16 and 39 respectively. Okubo fails to disclose the spreading code in an integer multiple number of bits of the orthogonal encoding scheme. However, Agrawal discloses encoding signal  $s(t)$  with orthogonal codes  $w_i(t)$  (fig. 2A, 202) and then spreading the encoded signal with a pseudo random (PN) spreading signal (204). Further Agrawal discloses the use of a PN spreading code of 1024 bits (col. 8, line 1). The orthogonal Walsh function is of length 4 (col. 5, lines 30-40). Because Agrawal discloses a transmitter which transmits a signal receivable from Okubo's receiver, it would be obvious to one skilled in the art at the time of invention to incorporate Agrawal's encoding into Okubo's receiving apparatus.

13. Claims 43, 45, 47, 48, 49, 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. and in further view of Agrawal et al.

**Claim 43**, Kim discloses generation of parallel spread spectrum data by multiplying data by orthogonal code (fig. 3, S35) and further multiplying spread data a scrambling code (S37). The scrambling code is based upon synchronization control message so that the spread and encoded data is synchronized (S37) and ready for transmission (S39). Kim fails to disclose phase shift key modulators, however, Agrawal discloses quadrature



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phase-shift key modulators (QPSK, fig. 4A, 300). As well as a receiver (fig. 6, 602), a transmitter (fig. 4A, 410A), and means of recovering received data (fig. 6).

**Claim 45**, inherits the limitations of Claim 43, although Kim fails to disclose that his orthogonal encoding method is an orthogonal Walsh encoder, however, wherein said means for encoding and spreading a data stream according to a first encoding scheme is an orthogonal Walsh encoder.

**Claims 47, 49, 52**, inherit the limitations of Claim 43, Kim fails to disclose that his scrambling code is a pseudo random noise (PN) signal, however, Agrawal discloses spreading the encoded signal with a pseudo random (PN) spreading signal (fig. 2A, 204).

**Claim 48**, inherits the limitations of Claim 43, further Kim discloses generating a preamble comprising timing information for each data packet and inserting said preamble into each data packet (fig. 2, [0029]).

14. Claims 11, 17, 18, 25, 26, 34, 36, 40, 41, 44, 46, 50, 51 are objected to as dependent upon rejected claims, but would be allowable if rewritten in independent form.

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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erin M. File

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5/12/2005



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